

IN THE CLAIMS:

Please add new claims 26-30.

1. A method for forming a layer on a substrate disposed in a processing chamber, said method comprising:

chemisorbing onto said substrate alternating monolayers of a first compound and a second compound, with said second compound having fluorine atoms associated therewith, with each of said first and second compounds being introduced into said processing chamber along with a carrier gas;

purging said processing chamber following chemisorption of each of the alternating monolayers, wherein the purging said processing chamber includes introducing a purge gas therein; and

controlling a quantity of said fluorine atoms associated with the monolayer of said second compound as a function of said carrier gas, wherein the purge gas and the carrier gas have differing constituents.

2. The method of claim 1 wherein controlling said quantity of said fluorine atoms further includes selecting said carrier gas from a group of gases consisting of nitrogen (N₂), argon (Ar), hydrogen (H₂).

3. The method as recited in claim 1 wherein said first compound includes a boron-containing compound.

4. The method of claim 1 wherein said second compound includes a refractory metal selected from the group consisting of titanium (Ti) and tungsten (W).

7. The method as recited in claim 1 wherein purging said processing chamber includes pumping said processing chamber to evacuate all gases disposed therein.

8. The method as recited in claim 1 wherein purging of said processing chamber includes pumping said processing chamber clear of all gases disposed therein after introducing the purge gas.

10. A method for forming a layer on a substrate disposed in a processing chamber, said method comprising:

serially exposing said substrate to first and second reactive gases, with said first reactive gas having a first compound associated therewith and said second reactive gas having a second compound associated therewith, to form alternating monolayers of said first compound and said second compound, with said second compound having fluorine atoms associated therewith;

controlling a quantity of said fluorine atoms associated with the monolayer of said second compound by introducing into said processing chamber a carrier gas along with said first and second reactive gases; and

purging said processing chamber following chemisorption of each of the alternating monolayers by introducing a purge gas, wherein the purge gas and the carrier gas have differing constituents.

12. The method as recited in claim 10 wherein purging said processing chamber includes pumping said processing chamber to evacuate all gases disposed therein.

13. The method as recited in claim 12 wherein said first compound includes diborane (B_2H_6) and said second compound is tungsten (W).

23. A method for forming a layer on a substrate disposed in a processing chamber, said method comprising:

serially exposing said substrate to first and second reactive gases to deposit monolayers on the substrate, with said first reactive gas having fluorine atoms associated therewith;

controlling a quantity of said fluorine atoms associated with the monolayers by introducing into said processing chamber hydrogen (H₂) as a carrier gas along with said first and second reactive gases; and

purging said processing chamber following deposition of each of the monolayers by introducing a purge gas, wherein the purge gas and the carrier gas have differing constituents.

26. (New) The method of claim 1, wherein the purge gas is argon and the carrier gas is nitrogen.

27. (New) The method of claim 1, wherein the purge gas is argon and the carrier gas is hydrogen.

28. (New) The method of claim 10, wherein the purge gas is argon and the carrier gas is nitrogen.

29. (New) The method of claim 10, wherein the purge gas is argon and the carrier gas is hydrogen.

30. (New) The method of claim 23, wherein the purge gas is argon.

REMARKS

This is intended as a full and complete response to the Office Action dated March 27, 2003, having a shortened statutory period for response set to expire on June 27, 2003. Please reconsider the claims pending in the application for reasons discussed below.

Applicants have added new claims 26-30 to claim additional aspects of the invention. Applicants submit that the changes made herein do not introduce new matter.